

Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean out, and Speed Control

BACKGROUND OF THE INVENTION

Shavers come mainly in two categories. Wet, manual shaver with blades using some kind of a shaving cream or electric shavers. Electric shavers have either a round shaving head where the cutting blade is rotated, straight or angled or the flat, oscillating, vibrating type. The electric razors all use electricity, AC or DC with rechargeable batteries with limited charge / discharge cycle and some uses alkaline throw away batteries, Life span of most shaver is reduced due to water incursion to the electric area, motor gets damp or wet, or rechargeable batteries are not easily replaceable and it gets disposed. Cleaning hair particles out of the razor screen area need brushing, air blowing and in some newer shavers the motor has a better insulation from water, allowing water cleaning of detachable shaver head. Shavers are not truly wet and dry types, they are wet or dry. My new invention has a solution for these type of short comings.

This Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean out, and Speed Control is a true wet and dry shaver.

My new invention has no electric parts, 100 % waterproof, it is submergible, it uses no electricity. It uses free parasite power source (water pressure), no batteries need to be recharged or exchanged. This new **Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean out, and Speed Control** is a true 100 % wet or dry shaver. Built in water nozzle flushes our hair particles solving prior arts' water intrusion problems into the motor, driving area.

Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean out, and Speed Control

DESCRIPTION OF PRIOR ART

United States Patent 4,549,352 Ochiai , et al. October 29, 1985 Washable electric shaver. A washable electric shaver comprising a water-tight housing having a drive motor therein and a switch. This invention is directed to a dry shaving apparatus with a housing in which an electric drive mechanism United States Patent 5,299,354 Metcalf , et al.

April 5, 1994 Ocillating shaver An oscillating wet shave razor with a battery powered motor rotating an eccentric element within the head portion of the razor handle to generate an oscillating vibration to the razor blade cartridge. United States Patent 5,544,415 Huang August 13, 1996 Water-proof and washable electric razor.

A structure of an electric water-proof detachable and washable razor has a unit of detaching blades and a unit of water-proof shells for receiving a battery, a motor, a switch. United States Patent 5,649,556 Braun July 22, 1997 Cleaning device for cleaning the shaving head of a dry shaving apparatus. The invention is directed to a cleaning device for cleaning the shaving head of a dry shaving apparatus with a cradle structure adapted to receive the shaving head , a cleaning fluid container holding a cleaning fluid, as well as a device adapted to be driven by a motor for feeding the cleaning fluid..

United States Patent 5,933,962 by Labarbara August 10, 1999 Oscillating razor is a detachable oscillating unit is provided which converts a conventional wet shave razor, such as a disposable razor, into an oscillating wet shave razor. United States Patent 6,497,043 by Jacobsen December 24, 2002 Intelligent shaver, a shaving device with one or more shaving blades.

Sensors are attached to (or near) the blades which produce a shaving signal. A processor or intelligent analysis unit then receives the shaving signal and determines what shaving changes should be made. United States Patent 6,493,941 Wong December 17, 2002

Motor-driven razor uses a foil-type electric razor includes with a coaxial motor and cutter. United States Patent 6,357,118 Eichhorn, et al. March 19, 2002 Electric razor.

Current U.S. Class: 134/92; 134/111; 134/166R; 134/186,

Field of Search: 134/111,155,186,92,184,166 C,166 R,201,62,116,135,

30/45,44,210,537,DIG. 1

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Intern'l Class: B08B 009/00, B26B 021/38

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Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean out, and Speed Control

SUMMARY OF THE INVENTION

This invention has a unique, new way to drive the “electric” type shavers, **miniature water turbine**. The **water pressure driven shaver** uses the water from the faucet in the bathroom or the shower outlet with a diverter to rotate the turbine, remains clean and reusable. This shaving device uses no electricity, environmental friendly, uses no alkaline or rechargeable batteries, only water in the home or in a hotel’s water system. Water volume adjustment is **the shaver’s speed control**, allows the user to adjust the shaver’s speed. The **Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean out, and Speed Control** is a new way to power up the “electric shavers”, most prior art types are adaptable. It saves money, water pressure in the city water system is used as a free “parasite” power source. This invention solves the long cleaning problem by allowing a built in water jet to rinse out the shaver from inside without destroying any component. It is waterproof, it is submergible.

In respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or as it is illustrated in the drawings.

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OBJECTS OF THE INVENTION

The main object of the invention is to create a new line of shavers by designing a water proof Wet and Dry shaver with an easy clean out which is adaptable to most prior art rotating or oscillating electric shavers with or without beard trimmer and nose hair trimmer. Provide a new economical way to drive the “electric “ type shavers by replacing electricity as the energy source with water pressure. By using a small water turbine which is adaptable to most electric razors, this **Water Pressure Driven Wet and Dry Shaver** is a 100 % water proof, it is submergible. The other object is to provide a clean out for the shaver by using a built in water jet, since there are no electric parts in the invention, no parts can be damaged in the apparatus by water.

By pressing the built in nozzle valve, the water flushes out all hair particles.

The water valve acts as a **Speed Control** by controlling the water flow, the user can adjust for the most desirable shaver speed.

Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean out, and Speed Control

Brief description of the invention

This invention has a unique, new way to drive the “electric” type shavers, **miniature water turbine**. The **water pressure driven shaver** uses the water from the faucet in the bathroom or the shower outlet with a diverter to rotate the turbine.

The **Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean-out and Seed control** is a new way to shave, economical, waterproof, it has a water clean out built in nozzle flushing away hair cuttings.

On **sheet 1** of the drawing FIG. 1 shows the elected shaver with an angled rotating blade assembly and beard trimmer (42). Water comes from the faucet from the diverter on FIG. 1 and 6 valve(62) controls the water flow and turbine (29) speed, and this rotation drives the round shaver blade(9). Normally closed push button valve(14) when activated the water flushes out the hair particles with nozzle(10), derbies flow out at opening(7) and opening (4). Hook (23) provides convenient hanging option if shaver is not in use.

Sheet 7 a straight version –removed, cancelled.

FIG 6 sheet 2 shows the same shaver without the bird trimmer, turbine(29) driven shaver Connects to the diverter (73) Fig 5. Sheet 3 Fig 7 shows the e the slanted rotating driving disk(36), moves cam follower(37) up and down which oscillates the moving cutting blade(33). When beard trimming is desired, blades are rotated outward 90 degree, stationary blade(42) is locked into the cutting position by leaf springs (38).

Sheet 4 (Cancelled) FIG 10 shows nose hair trimmer with a vertical worm gear type turbine(57).

Sheet 5 FIG 12 shows a flat oscillating water turbine driven shaver. Blades (15) FIG 13 of the driving turbine(29) is activated by the water as it flows in at barbed connector (24), flows trough speed control valve(62) when valve is opened by knob(2).

Water Pressure Driven Wet and Dry Shaver with Beard Trimmer, Water Clean out, and Speed Control

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Detailed description of the invention

On sheet 1 of the drawing FIG. 1 shows a shaver with an angled rotating blade assembly with a side mounted beard trimming assembly, sheet 2 FIG 6 without side trimmer..

Water comes from the faucet from the diverter on FIG. 5 Prior art diverter(73) is attached to the faucet by the treaded connector (18). When faucet is turned on diverter's knob(29) turns on the water pressure and water exits at barbed connector (20). The primary water volume controller is the diverter, by partial diverter opening the reduced water volume creates a slower rotating turbine FIG. 1 (29) therefore reducing the shaver's speed. Water under pressure flows to the shaver trough the dual flexible hose (71 in, 72 out) connects to barbed connector (24), pipe (13) and enters into the shaver's water volume / speed controller valve(62) on FIG 1 and becomes a speed control for the shaver. When speed control volume's knob(2) is opened, washer(27) lets the water flows up to the turbine (29) trough pipe (3) and enters at connector (16). Water under pressure rotates the turbine's blades FIG 3,6,1 (15), than used,(but still clean or reusable) water exits at outlet (26), barbed connector (25), outflow hose (72) to diverter (73) barbed outflow connector (21), out to sink at (22). When the turbine(29) is rotating shaft (11) with gears(6) transfer the rotational force to spin the circular blades(9) under screen(8). Rotating shaft is held in place by spacers (5), shaft guide or bearings, gear ratio of coupling gears(6) selects predetermined shaver speed.

Normally closed push button valve on FIG 1,2, 6 (14) is closed by spring(30), when activated by depressing button (31) valve cylinder (17) moves down to let the water flow up in pipe (13) through barbed connector (24, 25) to nozzle(10) then water flushes out the hair particles with nozzle(10), debris flow out at top opening(7) or if shaver is hanging on its hook(23) any excessive water can drip out at the bottom opening(7).

Inter chamber opening (4) lets any water left in chambers to drip out.

Sheet 1 FIG 1 shows the beard trimmer (33) in active position. Turbine rotates the slanted rotating driving disk(36), it moves cam follower(37) up and down which oscillates the moving cutting blade(33). Oscillating blades(33) and stationary blades (42) are tightly connected together (but movable) by rivets(41) Sheet 3 FIG 9 and 7. When beard trimming is desired, blades are rotated outward 90 degree, stationary blade(42) which is locked into the cutting position by the leaf springs(38) FIG 7,1, which is indented in the middle and attached to the body of the shaver(1), it is 90 degree offset to the beard cutting stationary blade(42), then gets locked into the cutting position by leaf springs (38). Stationary blade(42) is closer to the body(1) of the shaver and in open position leaf spring (38) holds it in position while rivets(41) are loose enough to allow oscillating motion of blade(33). Blade(33) is attached to the body(1) by pins (40) loosely fitting in metal tube(43) on hinge(32) to allow up and down motion. When beard trimmer is not in action, as shown on FIG 7, cam follower(37) is moved away from the rotating cam(36), in active position by pivoting the cutter assembly as shown on FIG 1 cam follower(37) is moved above the slanted cam surface(36) and pushed down by spring (37). Cam follower is pivoted by pin (34) Sheet3 FIG 9 which is attached to the

body at location (47). Elongated slot(34) in cam follower (37) allows the extra horizontal motion when beard trimmer moves from closed to open position. Cam follower is attached to the movable trimmer(33) by pin (63).

Sheet 4 vertical worm gear type(57) on the drawing on FIG 9 and 10 claim cancelled.

On Sheet 5 FIG 12 shows a flat water turbine driven shaver (39) when the water valve(2) is open, turbine(29) FIG 12,13 blades(15) start rotating with and attached oval cam (64), oscillates cam follower(69) which held close to the cam by spring(63). Speed control valve(62) when valve is opened by knob(2) turbine (15) drives cam(64), it moves shaver arm(69) and vibrates cutting blade assembly (18). Spring(63) keeps tension on the shaver arm. Oscillating shaving arm(69)is pivoted at pivoting post(66) attached at the top by pin(67), fitting into the lower part of oscillating shaver blade fixed position shaving screen(65) for cutting facial hair. When shaving is finished, clean out nozzle switch(14) is depressed, letting the water flow trough to flush out the hair particles with nozzle(10), dirty water with hair cuttings flow out at opening (7).